



General

Guideline Title

Screening for HIV: U.S. Preventive Services Task Force recommendation statement.

Bibliographic Source(s)

Moyer VA, U.S. Preventive Services Task Force. Screening for HIV: U.S. Preventive Services Task Force Recommendation Statement. *Ann Intern Med.* 2013 Jul 2;159(1):51-60. [44 references] [PubMed](#)

Guideline Status

This is the current release of the guideline.

This guideline updates a previous version: US Preventive Services Task Force. Screening for HIV: recommendation statement. *Ann Intern Med.* 2005 Jul 5;143(1):32-7. [48 references]

Recommendations

Major Recommendations

The U.S. Preventive Services Task Force (USPSTF) grades its recommendations (A, B, C, D, or I) and identifies the levels of certainty regarding net benefit (High, Moderate, and Low). The definitions of these grades can be found at the end of the "Major Recommendations" field.

Summary of Recommendations and Evidence

The USPSTF recommends that clinicians screen for human immunodeficiency virus (HIV) infection in adolescents and adults aged 15 to 65 years. Younger adolescents and older adults who are at increased risk should also be screened. (A recommendation)

See the Clinical Considerations below for more information about screening intervals.

The USPSTF recommends that clinicians screen all pregnant women for HIV, including those who present in labor who are untested and whose HIV status is unknown. (A recommendation)

See the figure in the original guideline document for a summary of the recommendations and suggestions for clinical practice.

Clinical Considerations

Patient Population Under Consideration

These recommendations apply to adolescents, adults, and pregnant women.

Screening for HIV infection could begin at age 15 years unless an individual is identified at an earlier age with risk factors for HIV infection. Screening after age 65 years is indicated if there is ongoing risk for HIV infection, as indicated by risk assessment (for example, new sexual partners).

Assessment of Risk

According to estimates from the Centers for Disease Control and Prevention (CDC), men who have sex with men account for about 60% of HIV-positive persons in the United States. Among men living with HIV infection who were diagnosed at age 13 years or older, 68% of infections are attributed to male-to-male sexual contact, 8% are attributed to male-to-male sexual contact and injection drug use, and 11% are attributed to heterosexual contact. Among women living with HIV infection, 74% of infections are attributed to heterosexual contact and the remainder to injection drug use. According to the CDC, heterosexual contact accounted for an estimated 25% of new HIV infections in 2010 and 27% of existing infections in 2009. Data from the CDC on HIV prevalence in different subpopulations are available at

www.cdc.gov/hiv/topics/surveillance .

On the basis of HIV prevalence data, the USPSTF considers men who have sex with men and active injection drug users to be at very high risk for new HIV infection. Behavioral risk factors for HIV infection include having unprotected vaginal or anal intercourse; having sexual partners who are HIV-infected, bisexual, or injection drug users; or exchanging sex for drugs or money. Other persons at high risk include those who have acquired or request testing for other sexually transmitted infections (STIs). Patients may request HIV testing in the absence of reported risk factors. Individuals not at increased risk for HIV infection include persons who are not sexually active, those who are sexually active in exclusive monogamous relationships with uninfected partners, and those who do not fall into any of the aforementioned categories. The USPSTF recognizes that these categories are not mutually exclusive, the degree of sexual risk is on a continuum, and individuals may not be aware of their sexual partners' risk factors for HIV infection. For patients younger than 15 years and older than 65 years, it would be reasonable for clinicians to consider HIV risk factors among individual patients, especially those with new sexual partners. However, clinicians should bear in mind that adolescent and adult patients may be reluctant to disclose having HIV risk factors, even when asked.

Screening Intervals

The evidence is insufficient to determine optimum time intervals for HIV screening. One reasonable approach would be 1-time screening of adolescent and adult patients to identify persons who are already HIV-positive, with repeated screening of those who are known to be at risk for HIV infection, those who are actively engaged in risky behaviors, and those who live or receive medical care in a high-prevalence setting. According to the CDC, a high prevalence setting is a geographic location or community with an HIV seroprevalence of at least 1%. These settings include sexually transmitted disease (STD) clinics, correctional facilities, homeless shelters, tuberculosis clinics, clinics serving men who have sex with men, and adolescent health clinics with a high prevalence of STDs. Patient populations that would more likely benefit from more frequent testing include those who are known to be at higher risk for HIV infection, those who are actively engaged in risky behaviors, and those who live in a high-prevalence setting. Given the paucity of available evidence for specific screening intervals, a reasonable approach may be to rescreen groups at very high risk (see "Assessment of Risk") for new HIV infection at least annually and individuals at increased risk at somewhat longer intervals (for example, 3 to 5 years). Routine rescreening may not be necessary for individuals who have not been at increased risk since they were found to be HIV-negative. Women screened during a previous pregnancy should be rescreened in subsequent pregnancies.

Screening Tests

The conventional serum test for diagnosing HIV infection is the repeatedly reactive immunoassay followed by confirmatory Western blot or immunofluorescent assay. The test is highly accurate (sensitivity and specificity, >99.5%), and results are available within 1 to 2 days from most commercial laboratories.

Rapid HIV testing may use either blood or oral fluid specimens and can provide results in 5 to 40 minutes. The sensitivity and specificity of the rapid test are also both greater than 99.5%; however, initial positive results require confirmation with conventional methods.

Other U.S. Food and Drug Administration–approved tests for detection and confirmation of HIV infection include combination tests (for p24 antigen and HIV antibodies) and qualitative HIV-1 ribonucleic acid (RNA).

Treatment

No cure for chronic HIV infection currently exists. However, appropriately timed interventions in HIV-positive persons can reduce risks for clinical progression, complications or death from the disease, and disease transmission. Effective interventions include antiretroviral therapy (ART) (specifically the use of combined ART, defined as 3 antiretrovirals agents used together, usually from classes), immunizations, and prophylaxis for opportunistic infections.

Other Approaches to Prevention

The USPSTF recognizes that the most effective strategy for reducing HIV-related morbidity and mortality in the United States is primary prevention or avoidance of exposure to HIV infection. Condom use can also substantially decrease the risk for transmission of HIV and other STIs.

The USPSTF recommends high-intensity behavioral counseling to prevent STIs for all sexually active adolescents and for adults at increased risk for infection. More information can be found at www.uspreventiveservicestaskforce.org/uspstf/uspstds.htm .

The Community Preventive Services Task Force has made several recommendations related to the prevention of HIV, acquired immunodeficiency syndrome (AIDS), and other STIs, including person-to-person behavioral interventions (information and skill building to change knowledge, attitudes, beliefs, and self-efficacy) for men who have sex with men that can be implemented at the individual, group, or community level. It also recommends health provider notification and encouragement for HIV testing for sexual or needle-sharing partners of individuals diagnosed with HIV, as well as comprehensive risk reduction interventions in adolescents. More information can be found at www.thecommunityguide.org/hiv/index.html .

Other Resources

More information about HIV and AIDS is available at www.aids.gov and www.cdc.gov/hiv/default.htm .

The CDC's recommendations on HIV testing in adults, adolescents, and pregnant women in health care settings are available at www.cdc.gov/mmwr/preview/mmwrhtml/rr5514a1.htm .

More information on HIV testing is available at <http://www.cdc.gov/hiv/testing/index.html> and www.fda.gov/ForConsumers/ByAudience/ForPatientAdvocates/HIVandAIDSActivities/ucml17922.htm .

Antiretroviral treatment guidelines are regularly updated and available at <http://aidsinfo.nih.gov/guidelines> .

Information about state-based HIV and AIDS hotlines is available at <http://hab.hrsa.gov/gethelp/statehotlines.html> .

Definitions:

What the U.S. Preventive Services Task Force (USPSTF) Grades Mean and Suggestions for Practice

Grade	Grade Definitions	Suggestions for Practice
A	The USPSTF recommends the service. There is high certainty that the net benefit is substantial.	Offer/provide this service.
B	The USPSTF recommends the service. There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial.	Offer/provide this service.
C	The USPSTF recommends selectively offering or providing this service to individual patients based on professional judgment and patient preferences. There is at least moderate certainty that the net benefit is small.	Offer/provide this service only if other considerations support offering or providing the service in an individual patient.
D	The USPSTF recommends against the service. There is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits.	Discourage the use of this service.
I Statement	The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of the service. Evidence is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be measured.	Read "Clinical Considerations" section of USPSTF Recommendation Statement (see the "Major Recommendations" field). If the service is offered, patients should understand the uncertainty about the balance of benefits and harms.

Definition: The USPSTF defines *certainty* as "likelihood that the USPSTF assessment of the net benefit of a preventive service is correct." The net benefit is defined as benefit minus harm of the preventive service as implemented in a general, primary care population. The USPSTF assigns a certainty level based on the nature of the overall evidence available to assess the net benefit of a preventive service.

Level of Certainty	Description
High	The available evidence usually includes consistent results from well-designed, well-conducted studies in representative primary care populations. These studies assess the effects of the preventive service on health outcomes. This conclusion is therefore unlikely to be strongly affected by the results of future studies.
Moderate	<p>The available evidence is sufficient to determine the effects of the preventive service on health outcomes, but confidence in the estimate is constrained by factors such as:</p> <ul style="list-style-type: none">• The number, size, or quality of individual studies• Inconsistency of findings across individual studies• Limited generalizability of findings to routine primary care practice; and• Lack of coherence in the chain of evidence <p>As more information becomes available, the magnitude or direction of the observed effect could change, and this change may be large enough to alter the conclusion.</p>
Low	<p>The available evidence is insufficient to assess effects on health outcomes. Evidence is insufficient because of:</p> <ul style="list-style-type: none">• The limited number or size of studies• Important flaws in study design or methods• Inconsistency of findings across individual studies• Gaps in the chain of evidence• Findings not generalizable to routine primary care practice; and• A lack of information on important health outcomes <p>More information may allow an estimation of effects on health outcomes.</p>

Clinical Algorithm(s)

None available

Scope

Disease/Condition(s)

Human immunodeficiency virus (HIV) infection

Guideline Category

Prevention

Screening

Clinical Specialty

Family Practice

Infectious Diseases

Internal Medicine

Obstetrics and Gynecology

Pediatrics

Preventive Medicine

Intended Users

Advanced Practice Nurses

Allied Health Personnel

Health Care Providers

Health Plans

Managed Care Organizations

Nurses

Physician Assistants

Physicians

Guideline Objective(s)

- To summarize the U.S. Preventive Services Task Force (USPSTF) recommendations on screening for human immunodeficiency virus (HIV) and the supporting scientific evidence
- To update the 2005 recommendations of the USPSTF

Target Population

Asymptomatic adolescents, adults, and pregnant women seen in primary care

Interventions and Practices Considered

Screening for human immunodeficiency virus (HIV) infection in:

- Adolescents and adults aged 15 to 65 years
- Younger adolescents and older adults at increased risk
- All pregnant women, including those who present in labor or whose HIV status is unknown

Major Outcomes Considered

Screening for Human Immunodeficiency Virus (HIV) in Asymptomatic Adolescents and Adults

- Key Question 1: What are the benefits of universal or targeted HIV screening versus no screening in asymptomatic, nonpregnant adolescents and adults on disease transmission, morbidity, mortality, and quality of life?
- Key Question 2a: What is the yield (number of new diagnoses) of HIV screening at different intervals in nonpregnant adolescents and adults?
- Key Question 2b: What are the effects of universal versus targeted HIV screening on testing acceptability and uptake in nonpregnant adolescents and adults?
- Key Question 2c: What is the effect of opt-out versus opt-in testing or different pre- or post-test HIV counseling methods on screening

uptake or rates of follow-up and linkage to care in nonpregnant adolescents and adults?

- Key Question 2d: What are the adverse effects (including false-positive results and anxiety) of rapid versus standard HIV testing in nonpregnant adolescents and adults not known to be at higher risk?
- Key Question 2e: What are the effects of universal versus targeted HIV screening on CD4 counts at the time of diagnosis?
- Key Question 2f: What are the effects of universal versus targeted HIV screening on rates of follow-up and linkage to care in nonpregnant adolescents and adults who screen positive?
- Key Question 3a: To what extent does knowledge of HIV-positive status affect behaviors associated with increased risk for HIV transmission in nonpregnant adolescents and adults?
- Key Question 3b: To what extent does use of antiretroviral therapy (ART) affect behaviors associated with increased risk of HIV transmission in nonpregnant adolescents and adults?
- Key Question 4a: How effective is ART for reducing transmission of HIV in nonpregnant adolescents and adults with chronic HIV infection?
- Key Question 4b: How effective is behavioral counseling in reducing transmission of HIV in nonpregnant adolescents and adults with chronic HIV infection?
- Key Question 4c: In asymptomatic, nonpregnant adolescents and adults with chronic HIV infection, what are the effects of initiating ART at different CD4 cell count or viral load thresholds on morbidity, mortality, and quality of life?
- Key Question 5: What are the longer-term harms associated with ART in nonpregnant adolescents and adults with chronic HIV infection?
- Key Question 6a: To what extent are improvements in viremia associated with reductions in HIV transmission rates in nonpregnant adolescents and adults?
- Key Question 6b: To what extent are improvements in risky behaviors associated with reductions in HIV transmission rates in nonpregnant adolescents and adults?

Screening for HIV in Pregnant Women

- Key Question 1: What are the benefits of HIV screening versus no screening in asymptomatic pregnant women on maternal or child morbidity, mortality, or quality of life or rates of mother-to-child transmission?
- Key Question 2a: What is the yield (number of new diagnoses) of repeat HIV screening in asymptomatic pregnant women?
- Key Question 2b: What are the adverse effects (including false-positive results and anxiety) of rapid versus standard HIV testing in asymptomatic pregnant women?
- Key Question 3a: What is the effectiveness of newer antiretroviral regimens for reducing mother-to-child transmission?
- Key Question 3b: What are the effects of antiretroviral regimens in pregnant, HIV-positive women on long-term maternal morbidity, mortality, or quality of life?
- Key Question 3c: What are the harms (including longer-term harms) to the mother or child associated with antiretroviral therapy during pregnancy?

Methodology

Methods Used to Collect/Select the Evidence

Hand-searches of Published Literature (Primary Sources)

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

Note from the National Guideline Clearinghouse (NGC): Systematic evidence reviews were prepared by the Oregon Evidence-based Practice Center (EPC), Oregon Health & Science University for the U.S. Preventive Services Task Force (USPSTF) (see the "Availability of Companion Documents" field).

Data Sources and Searches

The EPC searched Ovid MEDLINE from 2004 to June 2012 and the Cochrane Library through the second quarter of 2012 and reviewed reference lists to identify relevant articles published in English.

Study Selection

Asymptomatic Adolescents and Adults

At least 2 reviewers independently evaluated each study to determine inclusion eligibility. Papers were selected for full review if they were about HIV screening or treatments in nonpregnant adolescents and adults, were relevant to a key question, and met the predefined inclusion criteria (see Appendix Table 1, available from www.annals.org []). For treatment interventions, they focused on ART and counseling to reduce transmission risk. Outcomes were mortality, AIDS-related events, HIV transmission risk, and long-term (defined as ≥ 2 years after initiation of treatment) cardiovascular harms associated with ART. They included randomized, controlled trials and cohort studies for all key questions. They also included systematic reviews published since 2010 that met all predefined quality criteria.

Pregnant Women

At least 2 reviewers independently evaluated each study to determine eligibility for inclusion. Articles were selected for full review if they were about HIV infection in pregnancy, were relevant to a key question, and met the predefined inclusion criteria (see Appendix Table 1, available at www.annals.org []). Outcomes were mother-to-child transmission, morbidity, mortality, quality of life, and harms from antiretroviral therapy (such as adverse pregnancy outcomes; adverse congenital, neurodevelopmental, cardiovascular, metabolic, or hematologic outcomes in exposed children; and adverse clinical outcomes in mothers), including long-term outcomes (those occurring ≥ 1 year after birth for women and ≥ 2 years after birth for children). The reviewers included randomized, controlled trials and cohort studies for all key questions.

For key questions related to harms and other long term maternal and infant outcomes, the reviewers also included case control studies and intervention series if randomized trials and cohort studies were unavailable or lacking. For some key questions, they included studies from resource-poor settings that evaluated short-course antiretroviral regimens or breastfeeding populations, because these may provide some information about the effectiveness of antiretroviral therapies in U.S. women who present late in pregnancy or about the general effectiveness of combination antiretroviral therapy.

Number of Source Documents

Asymptomatic Adolescents and Adults

There were 56 included articles made up of randomized controlled trials, observational studies, and cohort studies.

Pregnant Women

There were 38 included studies in 43 publications.

Methods Used to Assess the Quality and Strength of the Evidence

Expert Consensus

Rating Scheme for the Strength of the Evidence

Not applicable

Methods Used to Analyze the Evidence

Systematic Review with Evidence Tables

Description of the Methods Used to Analyze the Evidence

Note from the National Guideline Clearinghouse (NGC): Systematic evidence reviews were prepared by the Oregon Evidence-based Practice Center (EPC), Oregon Health & Science University for the U.S. Preventive Services Task Force (USPSTF) (see the "Availability of Companion Documents" field).

Data Abstraction and Quality Rating

One investigator abstracted details about the study design, patient population, setting, screening method, interventions, analysis, follow-up, and results. A second investigator reviewed data abstraction for accuracy. Two investigators independently applied criteria developed by the USPSTF to rate the quality of each study as good, fair, or poor. Discrepancies were resolved by consensus.

Data Synthesis

EPC staff assessed the aggregate internal validity (quality) of the body of evidence for each key question as good, fair, or poor by using methods developed by the USPSTF, on the basis of the number, quality, and size of studies; consistency of results among studies; and directness of evidence.

Asymptomatic Adolescents and Adults

Meta-analysis was not attempted, although the reviewers reported meta-analyses from published systematic reviews that met our quality criteria.

Pregnant Women

Meta-analysis was not attempted because the data could not be pooled, owing to differences across studies in design, interventions, populations, and other factors.

Methods Used to Formulate the Recommendations

Balance Sheets

Expert Consensus

Description of Methods Used to Formulate the Recommendations

The U.S. Preventive Services Task Force (USPSTF) systematically reviews the evidence concerning both the benefits and harms of widespread implementation of a preventive service. It then assesses the certainty of the evidence and the magnitude of the benefits and harms. On the basis of this assessment, the USPSTF assigns a letter grade to each preventive service signifying its recommendation about provision of the service (see table below). An important, but often challenging, step is determining the balance between benefits and harms to estimate "net benefit" (that is, benefits minus harms).

Table 1. U.S. Preventive Services Task Force Recommendation Grid*

Certainty of Net Benefit	Magnitude of Net Benefit			
	Substantial	Moderate	Small	Zero/Negative
High	A	B	C	D
Moderate	B	B	C	D
Low	Insufficient			

*A, B, C, D, and I (*Insufficient*) represent the letter grades of recommendation or statement of insufficient evidence assigned by the U.S. Preventive Services Task Force after assessing certainty and magnitude of net benefit of the service (see the "Rating Scheme for the Strength of the Recommendations" field).

The overarching question that the Task Force seeks to answer for every preventive service is whether evidence suggests that provision of the service would improve health outcomes if implemented in a general primary care population. For screening topics, this standard could be met by a large randomized, controlled trial (RCT) in a representative asymptomatic population with follow-up of all members of both the group "invited for screening" and the group "not invited for screening."

Direct RCT evidence about screening is often unavailable, so the Task Force considers indirect evidence. To guide its selection of indirect evidence, the Task Force constructs a "chain of evidence" within an analytic framework. For each key question, the body of pertinent literature is

critically appraised, focusing on the following 6 questions:

1. Do the studies have the appropriate research design to answer the key question(s)?
2. To what extent are the existing studies of high quality? (i.e., what is the internal validity?)
3. To what extent are the results of the studies generalizable to the general U.S. primary care population and situation? (i.e., what is the external validity?)
4. How many studies have been conducted that address the key question(s)? How large are the studies? (i.e., what is the precision of the evidence?)
5. How consistent are the results of the studies?
6. Are there additional factors that assist the USPSTF in drawing conclusions (e.g., presence or absence of dose–response effects, fit within a biologic model)?

The next step in the Task Force process is to use the evidence from the key questions to assess whether there would be net benefit if the service were implemented. In 2001, the USPSTF published an article that documented its systematic processes of evidence evaluation and recommendation development. At that time, the Task Force's overall assessment of evidence was described as good, fair, or poor. The Task Force realized that this rating seemed to apply only to how well studies were conducted and did not fully capture all of the issues that go into an overall assessment of the evidence about net benefit. To avoid confusion, the Task Force has changed its terminology. Whereas individual study quality will continue to be characterized as good, fair, or poor, the term certainty will now be used to describe the Task Force's assessment of the overall body of evidence about net benefit of a preventive service and the likelihood that the assessment is correct. Certainty will be determined by considering all 6 questions listed above; the judgment about certainty will be described as high, moderate, or low.

In making its assessment of certainty about net benefit, the evaluation of the evidence from each key question plays a primary role. It is important to note that the Task Force makes recommendations for real-world medical practice in the United States and must determine to what extent the evidence for each key question—even evidence from screening RCTs or treatment RCTs—can be applied to the general primary care population. Frequently, studies are conducted in highly selected populations under special conditions. The Task Force must consider differences between the general primary care population and the populations studied in RCTs and make judgments about the likelihood of observing the same effect in actual practice.

It is also important to note that one of the key questions in the analytic framework refers to the potential harms of the preventive service. The Task Force considers the evidence about the benefits and harms of preventive services separately and equally. Data about harms are often obtained from observational studies because harms observed in RCTs may not be representative of those found in usual practice and because some harms are not completely measured and reported in RCTs.

Putting the body of evidence for all key questions together as a chain, the Task Force assesses the certainty of net benefit of a preventive service by asking the 6 major questions listed above. The Task Force would rate a body of convincing evidence about the benefits of a service that, for example, derives from several RCTs of screening in which the estimate of benefits can be generalized to the general primary care population as "high" certainty (see the "Rating Scheme for the Strength of Recommendations" field). The Task Force would rate a body of evidence that was not clearly applicable to general practice or has other defects in quality, research design, or consistency of studies as "moderate" certainty. Certainty is "low" when, for example, there are gaps in the evidence linking parts of the analytic framework, when evidence to determine the harms of treatment is unavailable, or when evidence about the benefits of treatment is insufficient. Table 4 in the methodology document listed below (see the "Availability of Companion Documents" field) summarizes the current terminology used by the Task Force to describe the critical assessment of evidence at all 3 levels: individual studies, key questions, and overall certainty of net benefit of the preventive service.

Sawaya GF et al. Update on the methods of the U.S. Preventive Services Task Force: estimating certainty and magnitude of net benefit. *Ann Intern Med.* 2007;147:871-875. [5 references].

Rating Scheme for the Strength of the Recommendations

What the U.S. Preventive Services Task Force (USPSTF) Grades Mean and Suggestions for Practice

Grade	Grade Definitions	Suggestions for Practice
A	The USPSTF recommends the service. There is high certainty that the net benefit is substantial.	Offer/provide this service.
B	The USPSTF recommends the service. There is high certainty	Offer/provide this service.

Grade	Grade Definitions	Suggestions for Practice
C	that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial. The USPSTF recommends selectively offering or providing this service to individual patients based on professional judgment and patient preferences. There is at least moderate certainty that the net benefit is small.	Offer/provide this service only if other considerations support offering or providing the service in an individual patient.
D	The USPSTF recommends against the service. There is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits.	Discourage the use of this service.
I Statement	The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of the service. Evidence is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be measured.	Read "Clinical Considerations" section of USPSTF Recommendation Statement (see the "Major Recommendations" field). If the service is offered, patients should understand the uncertainty about the balance of benefits and harms.

USPSTF Levels of Certainty Regarding Net Benefit

Definition: The USPSTF defines *certainty* as "likelihood that the USPSTF assessment of the net benefit of a preventive service is correct." The net benefit is defined as benefit minus harm of the preventive service as implemented in a general, primary care population. The USPSTF assigns a certainty level based on the nature of the overall evidence available to assess the net benefit of a preventive service.

Level of Certainty	Description
High	The available evidence usually includes consistent results from well-designed, well-conducted studies in representative primary care populations. These studies assess the effects of the preventive service on health outcomes. This conclusion is therefore unlikely to be strongly affected by the results of future studies.
Moderate	<p>The available evidence is sufficient to determine the effects of the preventive service on health outcomes, but confidence in the estimate is constrained by factors such as:</p> <ul style="list-style-type: none"> • The number, size, or quality of individual studies • Inconsistency of findings across individual studies • Limited generalizability of findings to routine primary care practice; and • Lack of coherence in the chain of evidence <p>As more information becomes available, the magnitude or direction of the observed effect could change, and this change may be large enough to alter the conclusion.</p>
Low	<p>The available evidence is insufficient to assess effects on health outcomes. Evidence is insufficient because of:</p> <ul style="list-style-type: none"> • The limited number or size of studies • Important flaws in study design or methods • Inconsistency of findings across individual studies • Gaps in the chain of evidence • Findings not generalizable to routine primary care practice; and • A lack of information on important health outcomes <p>More information may allow an estimation of effects on health outcomes.</p>

Cost Analysis

Cost-Effectiveness Analysis

The U.S. Preventive Services Task Force (USPSTF)'s deliberations on grade recommendations for the effectiveness of clinical preventive services

do not include cost or cost-effectiveness considerations. For policy context, however, the USPSTF reviewed some cost-effectiveness analyses published since its previous review. These analyses, which include downstream costs, support the cost-effectiveness of human immunodeficiency virus (HIV) screening in settings with low or average HIV prevalence. No studies directly compared universal versus targeted screening in low-prevalence populations or explicitly considered the potential long-term cardiovascular harms of antiretroviral therapy (ART).

See the evidence reviews for more information (see the "Availability of Companion Documents" field).

Method of Guideline Validation

Comparison with Guidelines from Other Groups

External Peer Review

Internal Peer Review

Description of Method of Guideline Validation

Peer Review. Before the U.S. Preventive Services Task Force (USPSTF) makes its final determinations about recommendations on a given preventive service, the Evidence-based Practice Center and the Agency for Healthcare Research and Quality send a draft evidence review to 4 to 6 external experts and to Federal agencies and professional and disease-based health organizations with interests in the topic. The experts are asked to examine the review critically for accuracy and completeness and to respond to a series of specific questions about the document. After assembling these external review comments and documenting the proposed response to key comments, the topic team presents this information to the USPSTF in memo form. In this way, the USPSTF can consider these external comments before it votes on its recommendations about the service. Draft recommendation statements are then circulated for comment among reviewers representing professional societies, voluntary organizations, and Federal agencies, as well as posted on the Task Force Web site for public comment. These comments are discussed before the final recommendations are confirmed.

Response to Public Comment. A draft version of this recommendation statement was posted for public comment on the USPSTF Web site from 19 November 2012 through 20 December 2012. In response to public comment, the USPSTF's final recommendation statement now includes a brief summary of its contextual review of cost-effectiveness analyses, clarifications of the potential harms that were examined in its systematic review, and an opt-out provision. The recommendation statement also includes more information about HIV prevalence and incidence in different population subgroups, HIV screening tests, and potential long-term harms of ART.

Comparison with Guidelines from Other Groups. Recommendations for screening from the following groups were discussed: the Centers for Disease Control and Prevention (CDC); the Infectious Diseases Society of America (IDSA); the American College of Obstetricians and Gynecologists (ACOG); the American Academy of Pediatrics (AAP); and the American Academy of Family Physicians (AAFP).

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of supporting evidence is not specifically stated for each recommendation.

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

The U.S. Preventive Services Task Force (USPSTF) found convincing evidence that identification and treatment of human immunodeficiency virus (HIV) infection is associated with a markedly reduced risk for progression to acquired immunodeficiency syndrome (AIDS), AIDS-related events, and death in individuals with immunologically advanced disease (defined as a CD4 count $<0.200 \times 10^9$ cells/L). Adequate evidence shows that initiating combined antiretroviral therapy (ART) earlier (that is, at CD4 counts between 0.200 and 0.500×10^9 cells/L)—when individuals are

more likely to be asymptomatic and detected by screening rather than clinical presentation—is also associated with reduced risk for AIDS-related events or death. The USPSTF found convincing evidence that the use of ART is associated with a substantially decreased risk for transmission from HIV-positive persons to uninfected heterosexual partners. Convincing evidence also shows that identification and treatment of HIV-positive pregnant women dramatically reduces rates of mother-to-child transmission. The overall benefits of screening for HIV infection in adolescents, adults, and pregnant women are substantial.

Potential Harms

The U.S. Preventive Services Task Force (USPSTF) found convincing evidence that individual antiretroviral drugs, drug classes, and combinations are all associated with short-term adverse events; however, many of these events are transient or self-limited, and effective alternatives can often be found. Although the long-term use of certain antiretroviral drugs may be associated with increased risk for cardiovascular and other adverse events, the magnitude of risk seems to be small. The overall harms of screening for and treatment of human immunodeficiency virus (HIV) infection in adolescents, adults, and pregnant women are small.

Qualifying Statements

Qualifying Statements

- Recommendations made by the U.S. Preventive Services Task Force (USPSTF) are independent of the U.S. government. They should not be construed as an official position of the Agency for Healthcare Research and Quality or the U.S. Department of Health and Human Services.
- The USPSTF makes recommendations about the effectiveness of specific clinical preventive services for patients without related signs or symptoms.
- It bases its recommendations on the evidence of both the benefits and harms of the service and an assessment of the balance. The USPSTF does not consider the costs of providing a service in this assessment.
- The USPSTF recognizes that clinical decisions involve more considerations than evidence alone. Clinicians should understand the evidence but individualize decision making to the specific patient or situation. Similarly, the USPSTF notes that policy and coverage decisions involve considerations in addition to the evidence of clinical benefits and harms.

Implementation of the Guideline

Description of Implementation Strategy

The experiences of the first and second U.S. Preventive Services Task Force (USPSTF), as well as that of other evidence-based guideline efforts, have highlighted the importance of identifying effective ways to implement clinical recommendations. Practice guidelines are relatively weak tools for changing clinical practice when used in isolation. To effect change, guidelines must be coupled with strategies to improve their acceptance and feasibility. Such strategies include enlisting the support of local opinion leaders, using reminder systems for clinicians and patients, adopting standing orders, and audit and feedback of information to clinicians about their compliance with recommended practice.

In the case of preventive services guidelines, implementation needs to go beyond traditional dissemination and promotion efforts to recognize the added patient and clinician barriers that affect preventive care. These include clinicians' ambivalence about whether preventive medicine is part of their job, the psychological and practical challenges that patients face in changing behaviors, lack of access to health care or of insurance coverage for preventive services for some patients, competing pressures within the context of shorter office visits, and the lack of organized systems in most practices to ensure the delivery of recommended preventive care.

Dissemination strategies have changed dramatically in this age of electronic information. While recognizing the continuing value of journals and other print formats for dissemination, the Agency for Healthcare Research and Quality will make all USPSTF products available through its [Web site](#) . The combination of electronic access and extensive material in the public domain should make it easier for a broad audience of users to access USPSTF materials and adapt them for their local needs. Online access to USPSTF products also opens up new possibilities for the appearance of the annual, pocket-size *Guide to Clinical Preventive Services*.

To be successful, approaches for implementing prevention have to be tailored to the local level and deal with the specific barriers at a given site, typically requiring the redesign of systems of care. Such a systems approach to prevention has had notable success in established staff-model health maintenance organizations, by addressing organization of care, emphasizing a philosophy of prevention, and altering the training and incentives for clinicians. Staff-model plans also benefit from integrated information systems that can track the use of needed services and generate automatic reminders aimed at patients and clinicians, some of the most consistently successful interventions. Information systems remain a major challenge for individual clinicians' offices, however, as well as for looser affiliations of practices in network-model managed care and independent practice associations, where data on patient visits, referrals, and test results are not always centralized.

Implementation Tools

Foreign Language Translations

Mobile Device Resources

Patient Resources

Pocket Guide/Reference Cards

Staff Training/Competency Material

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Staying Healthy

IOM Domain

Effectiveness

Patient-centeredness

Identifying Information and Availability

Bibliographic Source(s)

Moyer VA, U.S. Preventive Services Task Force. Screening for HIV: U.S. Preventive Services Task Force Recommendation Statement. *Ann Intern Med*. 2013 Jul 2;159(1):51-60. [44 references] [PubMed](#)

Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

1996 (revised 2013 Jul 2)

Guideline Developer(s)

U.S. Preventive Services Task Force - Independent Expert Panel

Guideline Developer Comment

The U.S. Preventive Services Task Force (USPSTF) is a federally-appointed panel of independent experts. Conclusions of the USPSTF do not necessarily reflect policy of the U.S. Department of Health and Human Services (DHHS) or DHHS agencies.

Source(s) of Funding

The U.S. Preventive Services Task Force (USPSTF) is an independent, voluntary body. The U.S. Congress mandates that the Agency for Healthcare Research and Quality support the operations of the USPSTF.

Guideline Committee

U.S. Preventive Services Task Force (USPSTF)

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Former USPSTF members who contributed to the development of this recommendation include George Isham, MD, MS, and Timothy J. Wilt, MD, MPH.

**Members of the U.S. Preventive Services Task Force at the time this recommendation was finalized. For a list of current Task Force members, go to <http://www.uspreventiveservicestaskforce.org/Page/Name/our-members> .*

Financial Disclosures/Conflicts of Interest

The U.S. Preventive Services Task Force (USPSTF) has an explicit policy concerning conflict of interest. All members disclose at each meeting if they have a significant financial, professional/business, or intellectual conflict for each topic being discussed. USPSTF members with conflicts may be recused from discussing or voting on recommendations about the topic in question.

Potential Conflicts of Interest: None disclosed.

Guideline Status

This is the current release of the guideline.

This guideline updates a previous version: US Preventive Services Task Force. Screening for HIV: recommendation statement. Ann Intern Med.

Guideline Availability

Electronic copies: Available from the [Annals of Internal Medicine Web site](#) .

Availability of Companion Documents

The following are available:

Evidence Reviews:

- Chou R, Selph S, Dana T, Bougatsos C, Zakher B, Blazina I, Korthuis PT. Screening for human immunodeficiency virus (HIV): systematic review to update the 2005 U.S. Preventive Services Task Force recommendation. *Ann Intern Med.* 2012 Nov 20;157(10):706-18.
- Chou R, Cantor AG, Zakher B, Bougatsos C. Screening for HIV in pregnant women: systematic review to update the 2005 U.S. Preventive Services Task Force recommendation. *Ann Intern Med.* 2012 Nov 20;157(10):719-28.
- Chou R, Selph S, Dana T, Bougatsos C, Zakher B, Blazina I, Korthuis PT. Screening for HIV: systematic review to update the U.S. Preventive Services Task Force recommendation. Evidence synthesis: No. 95. AHRQ Publication No. 12-05173-EF-1. Rockville (MD): Agency for Healthcare Research and Quality; 2012 Nov.
- Chou R, Cantor A, Bougatsos C, Zakher B. Screening for HIV in pregnant women: systematic review to update the U.S. Preventive Services Task Force recommendation. Evidence synthesis: No. 96. AHRQ Publication No. 12-05173-EF-2. Rockville (MD): Agency for Healthcare Research and Quality; 2012 Nov.

Electronic copies: Available from the [U.S. Preventive Services Task Force Web site \(USPSTF\)](#) .

Background Articles:

- Barton MB et al. How to read the new recommendation statement: methods update from the U.S. Preventive Services Task Force. *Ann Intern Med* 2007;147:123-127.
- Guirgis-Blake J et al. Current processes of the U.S. Preventive Services Task Force: refining evidence-based recommendation development. *Ann Intern Med* 2007;147:117-122.
- Sawaya GF et al. Update on the methods of the U.S. Preventive Services Task Force: estimating certainty and magnitude of net benefit. *Ann Intern Med* 2007;147:871-875.
- Petitti DB et al. Update on the methods of the U.S. Preventive Services Task Force: insufficient evidence. *Ann Intern Med.* 2009;150:199-205.

Electronic copies: Available from the [USPSTF Web site](#) .

The following are also available:

- Clinical summary of U.S. Preventive Services Task Force recommendation. Rockville (MD): U.S. Preventive Services Task Force; 2013 Jul. Electronic copies: Available from the [USPSTF Web site](#) .
- The guide to clinical preventive services, 2012. Recommendations of the U.S. Preventive Services Task Force. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2012. 128 p. Electronic copies available from the [AHRQ Web site](#) . See the related QualityTool summary on the [Health Care Innovations Exchange Web site](#) .
- A continuing medical education (CME) activity is available from the [Annals of Internal Medicine Web site](#) .

The [Electronic Preventive Services Selector \(ePSS\)](#) is an application designed to provide primary care clinicians and health care teams timely decision support regarding appropriate screening, counseling, and preventive services for their patients. It is based on current recommendations of the USPSTF and can be searched by specific patient characteristics such as age, sex, and selected behavioral risk factors.

Patient Resources

The following are available:

- Understanding task force recommendations: screening for human immunodeficiency virus (HIV) consumer fact sheet. Rockville (MD): Agency for Healthcare Research and Quality; 2013 Apr. 4 p. Electronic copies: Available from the [U.S. Preventive Services Task Force \(USPSTF\) Web site](#) .
- Women: stay healthy at any age. Rockville (MD): Agency for Healthcare Research and Quality. AHRQ Pub. No. 10-IP002-A. 2010 Aug. 2 p. Electronic copies: Available in PDF in [English](#) and [Spanish](#) from the AHRQ Web site. See the related QualityTool summary on the [Health Care Innovations Exchange Web site](#) .
- Men: stay healthy at any age. Rockville (MD): Agency for Healthcare Research and Quality. AHRQ Pub. No. 10-IP004-A. 2010 Aug. 2 p. Electronic copies: Available in PDF in [English](#) and [Spanish](#) from the AHRQ Web site. See the related QualityTool summary on the [Health Care Innovations Exchange Web site](#) .

Print copies: Available in English and Spanish from the Agency for Healthcare Research and Quality (AHRQ) Publications Clearinghouse. For more information, go to <http://www.ahrq.gov/research/publications/index.html> or call 1-800-358-9295 (U.S. only).

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NGC Status

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